(No Model.)

G. P. GOULDING.

BRUSH FOR BOTTLE WASHERS.

No. 344,267. Patented June 22, 1886.

Fig. 1.

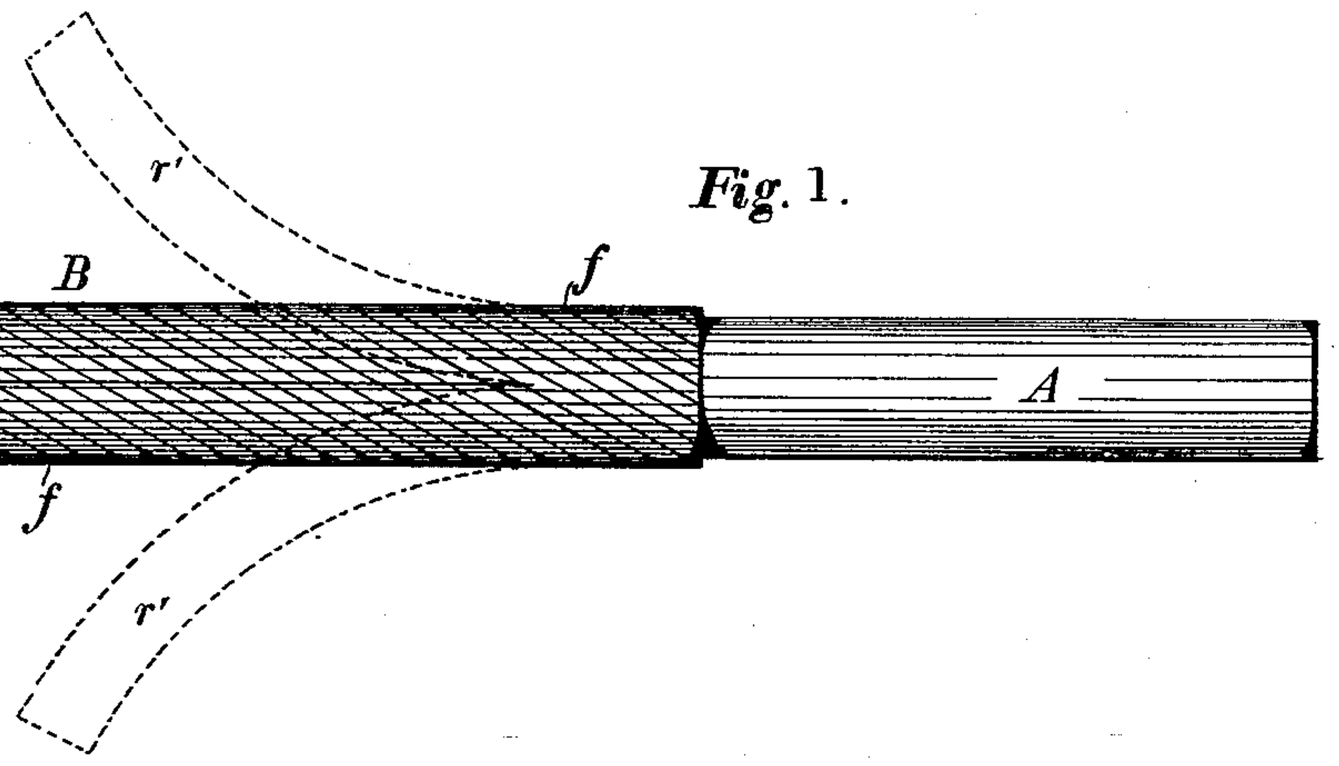


Fig. 2

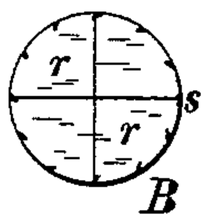


Fig. 3.

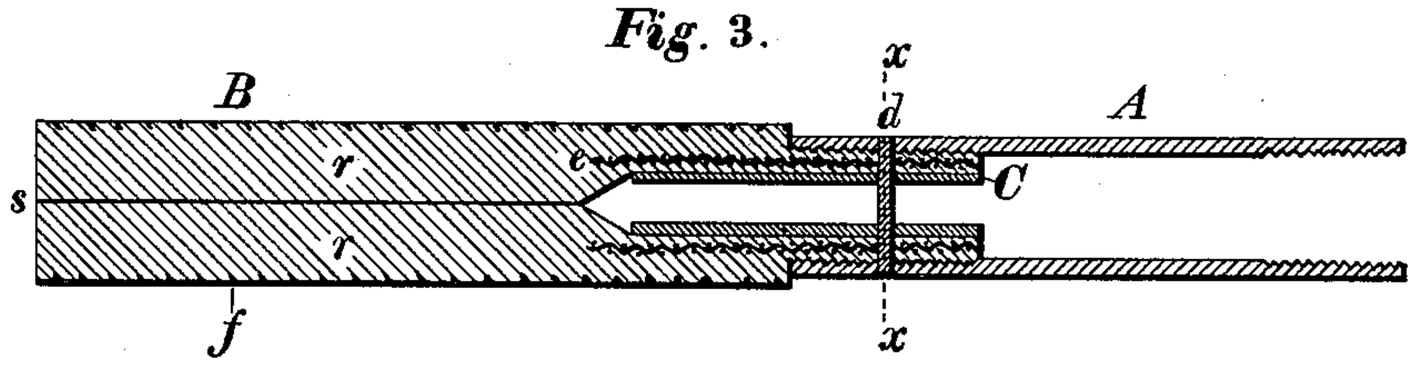
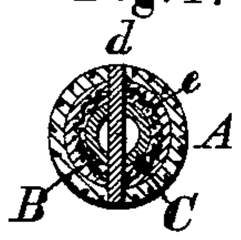


Fig. 4.



WITNESSES -

H. G. Phillips.

L. A. Kane

INVENTOR -

Geo. P. Goulding,

by Geo. B. Selden,

Attorney -

UNITED STATES PATENT OFFICE.

GEORGE P. GOULDING, OF ROCHESTER, NEW YORK.

BRUSH FOR BOTTLE-WASHERS.

SPECIFICATION forming part of Letters Patent No. 344,267, dated June 22, 1886.

Application filed December 26, 1884. Serial No. 151,237. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. GOULDING, of Rochester, New York, have invented certain Improvements in Brushes for Bottle-Washers, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates to certain improvements in brushes for bottle-washers, designed more particularly for use in connection with the bottle-washing machines described in my previous applications Nos. 99,794 and 132,448, but capable of being employed in other machines.

My improvements are fully described in the following specification, and the novel features thereof specified in the claims thereunto annexed.

In the accompanying drawings, representing my improvements in brushes for bottle-washing machines, Figure 1 is a side view. Fig. 2 is an end view. Fig. 3 is a longitudinal section. Fig. 4 is a transverse section on the line *x x*, Fig. 3.

In the accompanying drawings, A represents a metallic tube or thimble, by which the brush B is attached to the revolving spindle of a bottle-washing machine, the thimble being provided with internal threads at either end, as shown in the sectional view, Fig. 3, for the insertion of the brush in the thimble and the attachment of the thimble to the spindle.

The brush B consists of an india-rubber rod of suitable section divided longitudinally, as indicated at *s*, so that the divided parts *r* may expand, as shown by the dotted lines *r' r'*, Fig. 1, from the action of centrifugal force when the brush is caused to revolve rapidly, and provided with an axial perforation at the end which is inserted in the thimble, through which a current of water is designed to be discharged into the bottle during the operation of washing its interior.

The object of making the rod solid throughout its divided portion is to secure as great weight as possible in the strips *r*, so as to cause them to expand with the greatest force against the interior of the bottle. The exterior surface of the strips *r* is also preferably corrugated at an angle with the longitudinal axis of the brush, as indicated at *f* in the drawings, Fig. 1, so as to increase the efficiency of the scouring or cleaning action of the brush on the inner surface of the bottle.

The brush is conveniently made by being vulcanized in one piece with the hole in its inner end, the solid part being subsequently divided with a suitable cutting-instrument.

In order to strengthen the brush at the end which is attached to the thimble, I insert in it during the vulcanizing process one or more layers of strong cloth or canvas, *e*.

In order to secure the firm attachment of the brush to the thimble, I insert into the axial perforation in the brush the tube C, and fasten the brush and tube in place in the thimble by means of the screw or pin *d*, which is smaller than the opening in the tube C, as shown in the sectional view, Fig. 4, so as not to interfere with the discharge of a sufficient quantity of water through the tube. The thimble is preferably threaded internally, and the brush screwed into it, being thereby compressed and more securely fastened therein.

My improved brush for bottle-washing machines is cheap in construction, exceedingly durable, and highly efficient in operation.

I claim—

1. The combination, with the scraper or brush consisting of the rod or cylinder of rubber divided longitudinally for a portion of its length and provided at one end with a recess or socket, of the cloth or canvas tube secured to the brush around the socket for strengthening it, substantially as described.

2. The herein-described scraper or brush, consisting of the rod or cylinder of rubber recessed for a portion of its length and split longitudinally for the remainder, provided on its exterior surface with the corrugations or ribs arranged at an angle to the longitudinal axis of the brush, substantially as described.

3. The combination, with the scraper or brush consisting of the rod or cylinder of rubber having a socket at one end and split longitudinally for the remainder of its length, of the inner tube placed within the socket, and the revolving spindle, to which the inner tube is adapted to be secured, substantially as described.

4. The combination, with the hollow spindle A, and the scraper or brush consisting of the rod or cylinder having the socket at one end and split longitudinally for the remainder

of its length, of the canvas or cloth secured to the rubber around the socket, substantially as described.

5. The combination, with the hollow spindle A, and the scraper or brush having the socket at one end and split longitudinally, as described, of the canvas or cloth secured to the rubber around the socket, and the inner tube placed within the socket and secured to the spindle, substantially as described.

6. The combination, with the longitudinally-divided revolving india-rubber brush or scraper B, of the revolving hollow spindle A, inner tube, C, canvas *e*, and pin *d*, substantially as described.

7. The improved brush for cleansing the interior of bottles, consisting, essentially, of the rod of rubber or equivalent flexible material formed with a longitudinal passage at one end, and provided at the other end with a series of flexible rods or sections overlapping and partially closing the inner end of the passage for the cleansing-fluid when said rods or sections are brought together, substantially as described.

GEO. P. GOULDING.

Witnesses:
GEO. B. SELDEN,
L. A. KANE.